Graduate School of Management Summer Quarter 2020
University of California, Davis Chih-Ling Tsai

MGB/P 203B–Forecasting & Managerial Research Methods

PREREQUISITE: MGB/P 203A

LECTURES: Saturday: 9:00 a.m. -11:55 a.m.
1:00 p.m. – 3:55 p.m.

INSTRUCTOR: Chih-Ling Tsai
3210 Gallagher Hall
cltsai@ucdavis.edu

OFFICE HOURS: By appointments

TEXT: Statistics for Management and Economics, **Eleventh** Edition, by Gerald Keller.

APPROXIMATE MATERIAL TO BE COVERED: GK: Chapters 14-21 (see the last page for details)

NOTES and HANDOUTS: Please purchase MGT/P/B 203B Notes and MGT/P/B 203B Numerical Handouts online from the UCD bookstore.

COMPUTER PACKAGE MINITAB (version 19) is used for the class.
You can rent it from the website:
http://www.onthehub.com/minitab/

You may use Excel to do homework, but some problems are needed to be done by Minitab.

IMPORTANT DATES:

Saturday, 6/20/20	First day of class
Saturday, 7/25/20 (9:00 a.m. -12:00 p.m.)	Midterm (open book)
Saturday, 9/5/20 (9:00 a.m. to 12:00 p.m.)	Final Exam (open book)

Due to downloading the exam and uploading your test, the exam starts at 8:45 am and ends at 12:30 pm.

GRADING:

Midterm	30%
Final Exam	40%
Homework	30%

Course Objectives:

1. Exhibit the GSM principle: Be able to explain Statistics (S) to your Grand Mother (GM); hence GSM. In other words, explain concepts and convey business analytic results to your classmates, boss, colleagues, staff or customers in layman's terms while applying statistical concepts and techniques.

2. Be able to use what you have learned from this course to conduct data analysis and to evaluate results by yourself.

3. Build a solid foundation for business analytics, and prepare you for other analytics-related courses.

ADDITIONAL INFORMATION:

1. I will discuss upcoming homework during my lecture so you can better prepare for it. I also plan to deliver my virtual lectures in the classroom 2310 of Gallagher Hall. Thus, I can use physical white board to effectively deliver the course contents and their associated applications.

2. Based on my 30 years' teaching experience, I have prepared MGT/P/B-203B Notes and MGT/P/B-203B Numerical Handouts, which you can purchase them online from the UCD book store. This will help you to learn materials effectively.

3. Following are some helpful suggestions as well as important notes that past students consider useful. Please pay particular attention to the dates and times of the midterms, homework assignments, and the final exam in the syllabus. With your effort and cooperation, Summer Quarter will be a success.

Suggestions:

- The **team number** will be assigned at the first day of my lecture.
- If you have any problems in understanding the material please **DO NOT HESITATE TO ASK ME FOR HELP.**
- After you finish each chapter, please **review** the material again and **summarize** what you have learned. Ask yourself, what is the relationship between each Chapter? Do some practice problems to help you **understand** the material rather than just memorize the material.
- Please write your homework **clearly** and **print** your name and the **team number** at the top of the right hand corner on the first page of your homework assignment.

Notes:

- Assignments may be done in groups of no more than **three** students in general; only **one** copy of a group assignment needs to be handed in. However, **each** student is responsible for the content of **all** assignments.

- Homework turned in late will **not** be graded in general. In addition**,** makeup exams will **not** be given. (Exception to the rule: only if instructor agrees you have just cause to make up the exam.)

- Please **do not** come late, and the lecture begins at 9:00 am.

- **I do not tolerate cheating. In addition, please visit the website "http://sja.ucdavis.edu/files/cac.pdf" to study the "the Code of Academic Conduct"** and **visit participate.ucdavis.edu to understand participation requirements.**

Chapter Contents

---

14 Analysis of Variance

- One-way analysis of variance
- Randomized block design

19 Nonparametric Statistics

-Wilcoxon rank test
-Kruskall-Wallis test for the completely randomized design

15 Chi-Squared Tests

- Chi-squared goodness of fit test
- Chi-squared test of a contingency Table

16 Simple Linear Regression and Correlation

- Model fitting
- Parameter estimates and interpretations
- Statistical inference and forecasting

17 & 18 Multiple Regression Model

- Regression Diagnostics (Check the appropriateness of model assumptions)
- Regression model with autocorrelated errors
- Polynomial regression and nonlinear regression models
- Regression models with dummy variables
- variable selections

20 Time Series Analysis and Forecasting

- Trend analysis
- Measuring cyclical and seasonal effects
- Times series forecasting with smoothing techniques

21 Statistical Process Control